Sea Engineering Inc.

Daily Oversight Log

Project: NBSA
Proj. Location: Newark Bay, Newark, NJ
Client: HDR/HQI, LBG, EPA
Date: 5-Dec-2012
Page: 1 of 2

Survey Information

Personnel:	Bob Wallace, George Main, John Bean, Len (OSI)	**Survey Company:**	Ocean Surveys, Inc.
	Cliff Firstenberg (TSI)	**Weather Conditions:**	Mostly Cloudy, Cold
	Jason Magalen (SEI)		Breezy (5-15 knts)
Start Time:	6:45 **Stop Time:** 16:45		Waves less than 2'

Daily Log of Activities and Observations

Time (EDT)	Activity Description
6:45	Arrive Robbins Reef Yacht Club (RRYC) in Bayonne, NJ (Jason and Cliff)
7:15	OSI arrives on site
7:30	Vessel Safety and Equipment Orientation
	Vessel Equipment Description (ABLE II is multi-beam vessel; READY II is single-beam vessel)
	ABLE II Equipment: Reson 8125 multi-beam sonar, SBE37 sound velocity sensor, POS MV Inertial
	Motion Unit; Trimble 5700 RTK GPS Rover, SBE CTD Profiler
	READY II Equipment: Odom MKIII single-beam sonar, Trimble RTK GPS, TSS DMS-05 MRU
8:30	Depart RRYC and head towards Port Elizabeth Terminals to verify positioning and set the tide gauge
8:50	Tide up alongside Port Elizabeth Terminals Berth 76 for navigation check
	-Comparing the reported position of Pt. 51 (NY/NJ Port Authority monument) with measurements
	-Also checking in (comparing reported to measured) at "Pt Q" on the NE corner of the terminal and Pt 50
	on the north side of the terminal
10:00	All locations are checking in vertically within 0.05'. All locations are checking in horizontally a distance of
	0.4' away from the reported coordinates.
	-On 12/4/20120 OSI created an accurate base station location point by collecting 3 different 15-minute
	GPS data files and submitting them to the Online User Positioning System (OPUS) for coordinate solution
	-On 12/5/2012 OSI collected an additional 15 minute data file from Pt. 51 (NY/NJ Port Authority)
	monument at the Port Elizabeth terminals and submitted to OPUS (see below at 13:45).
	-The coordinates returned from this point, as well, were 0.4' separated from the reported horizontal
	coordinates (by the NY/NY Port Authority). The OPUS solution agreed within 0.1' to the reported
	vertical elevation (lending more credence to the theory that the NY/NY PA monument locations
	may be incorrect or in a slightly different coordinate system
11:00	Break down tripod at Berth 76 location and wait for new OPUS solutions to be returned (via email)
11:00	Bob Wallace (OSI) And Cliff Firstenberg (TSI) prepare to complete a level loop from Pt 51 to Pt 50
	and including a few other known elevation monuments, and the top of the tide board
11:00	It was reported by the Vessel READY II that 1 of the 2 Coastal Leasing MactoTide tide gauges
	was malfunctioning. The cause was being troubleshooted.
11:00	Begin first traverse of level loop from Pt 51 to Pt 50.
11:30	Elevation after level loop checks in within 0.01' to the reported elevation at Pt 50.
11:30	Begin traverse from Pt 50 to the NE corner of Port Elizabeth Terminals
12:00	Checking in at "Pt Q" at the NE corner of the Port Elizabeth Terminals
	-Level loop error is 0.13', so the traverse will be run again
12:15	Begin traverse again from Pt 50 to Pt Q
12:30	Complete traverse from Pt 50 to Pt. Q. Offset is approximately 0.01'
12:30	Top of tide board surveyed during level loop. Top of tide board is 6.26' NGVD29.
	-The tide board is 12' tall. Daily readings will be made in the tide board datum, and the conversion
	will need to be applied to get the proper water surface elevation in NGVD29 datum.
12:35	Begin traverse to close the level loop (Pt Q to Pt 51)
12:50	The level loop total offset is 0.0'
13:00	Back on ABLE II to check if the OPUS solutions have been returned via email yet
13:45	The OPUS solution from Pt 51 agrees very well vertically (less than 0.1' offset) and is approximately
	0.4' offset from the reported horizontal coordinates.

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	Jason Magalen (SEI)		-
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Time (EDT)	Activity Description
13:50	READY II directed to do navigation checks at Pt 51 and "OSI Checks" points again
14:15	ABLE II back at RRYC and removing the Trimble 5700 Rover and RTK GPS radio so that a scondary
	QC Check of position can be made on a published NGS point at Bayonne City Park (nearby). This is
	the same NGS benchmark that was used by Gahagan and Bryant Associates (GBA) as a QC check
	during the setup/calibration for the June 2010 Passaic River multibeam survey.
	Point Information from GBA 2010 LPR Survey report: NGS PID KV6837
	Northing: 666572.72' Easting 594085.07' Elev.: 7.202 NGVD29 & NAVD88
	Elevation reported as 7.202' in both NGVD29 and NAVD88 (correct elevation uncertain at this point)
	Monument is stamped: "9 C 1 1992"
15:00	Jason (SEI), Cliff (TSI), Bob and George (OSI) drive to Bayonne City Park and locate NGS KV6837
16:30	NGS PID KV6837 checks in well horizontally (i.e. using the OPUS-derived base station coordinates at
	RRYC, the measured horizontal coordinates are within 0.1' of the NGS published values.
	-However, the elevation of the point could not be verified reliably. Using several different geoid models,
	neither the NGS published values nor the GBA reported elevations were in agreement with the measured
	elevations obtained with the RTK GPS. Though the OSI system seems to be operating accurately and
	within compliance, it is suggested that OSI research any other published NGS data points that are nearby
	that could be occupied with the RTK GPS for one additional QC check on position.
16:45	Back at RRYC to regroup.
	Quit for the day